IN THE CLAIMS

This listing of claims replaces all prior listings:

1. (currently amended) A method in a data processing system for optimizing a program, the method comprising the steps of:

automatically analyzing a statistical profile of a program execution; and

automatically optimizing ~~program~~ object code of the program based on ~~at least one of~~ the analysis, information about at least one prior compilation of the program, and information about at least one prior optimization of the program,

wherein the automatic optimizing includes determining that additional information is required to optimize the object code of the program, performing a first compiling of a portion of the program, executing the first compiled portion of the program, gathering the additional information, and performing a second compiling of the portion of the program using the gathered additional information.

2. (original) The method of claim 1, wherein the program is automatically optimized during a compilation.

3. (original) The method of claim 2, wherein the program is automatically optimized during a run-time compilation.

4. (original) The method of claim 1, further comprising the steps of:

interrupting the program;

recording an execution state of the program; and

storing the recorded execution state to create the statistical profile.

5. (original) The method of claim 1, wherein the information about at least one prior compilation of the program includes a profile of the program implemented during the at least one prior compilation.

6. (original) The method of claim 1, wherein the information about at least one prior optimization of the program includes a profile of at least one change made to the program during the at least one prior compilation.

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7. (currently amended) A computer-readable storage medium containing instructions that cause a data processing system to perform a method for optimizing a program, the method comprising the steps of:

automatically analyzing a statistical profile of a program execution; and

automatically optimizing ~~program~~ object code of the program based on ~~at least one of~~ the analysis, information about at least one prior compilation of the program, and information about at least one prior optimization of the program,

wherein the automatic optimizing includes determining that additional information is required to optimize the object code of the program, performing a first compiling of a portion of the program, executing the first compiled portion of the program, gathering the additional information, and performing a second compiling of the portion of the program using the gathered additional information.

8. (currently amended) The computer-readable storage medium of claim 7, wherein the program is automatically optimized during a compilation.

9. (currently amended) The computer-readable storage medium of claim 8, wherein the program is automatically optimized during a run-time compilation.

10. (currently amended) The computer-readable storage medium of claim 7, further comprising the steps of:

interrupting the program;

recording an execution state of the program; and

storing the recorded execution state to create the statistical profile.

11. (currently amended) The computer-readable storage medium of claim 7, wherein the information about at least one prior compilation of the program includes a profile of the program implemented during the at least one prior compilation.

12. (currently amended) The computer-readable storage medium of claim 7, wherein the information about at least one prior optimization of the program includes a profile of at least one change made to the program during the at least one prior compilation.

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13. (currently amended) A data processing system for optimizing a program, the data processing system comprising:

a memory having an optimization program that automatically analyzes a statistical profile of a program execution, and automatically optimizes object ~~program~~ code of the program based on ~~at least one of~~ the analysis, information about at least one prior compilation of the program, and information about at least one prior optimization of the program, wherein the automatic optimizing includes determining that additional information is required to optimize the object code of the program, performing a first compiling of a portion of the program, executing the first compiled portion of the program, gathering the additional information, and performing a second compiling of the portion of the program using the gathered additional information; and

a processing unit that runs the program.

14. (original) The data processing system according to claim 13, wherein the program is automatically optimized during a compilation.

15. (original) The data processing system according to claim 14, wherein the program is automatically optimized during run-time compilation.

16. (currently amended) A data processing system having a processing unit and a memory for optimizing a program, the data processing system comprising:

means for automatically analyzing a statistical profile of a program execution; and

means for automatically optimizing object ~~program~~ code of the program based on ~~at least one of~~ the analysis, information about at least one prior compilation of the program, and information about at least one prior optimization of the program, wherein the automatic optimizing includes determining that additional information is required to optimize the object code of the program, performing a first compiling of a portion of the program, executing the first compiled portion of the program, gathering the additional information, and performing a second compiling of the portion of the program using the gathered additional information.